



About Venous Arterial Thromboembolism (VAT)

What is Venous Arterial Thromboembolism (VAT)?

- ◆ Thrombosis is the formation of a blood clot inside a blood vessel, blocking a vein (venous thrombosis) or artery (arterial thrombosis). Venous arterial thromboembolism (VAT) is caused when a clot becomes loose and is moved by the blood stream to obstruct another vessel. This can result in damage to vital organs, because the tissue beyond the blockage no longer receives nutrients and oxygen. VAT encompasses two serious conditions – venous thromboembolism (VTE) and arterial thromboembolism

What is Venous Thromboembolism (VTE)?

- ◆ VTE is the third most common cardiovascular disease worldwide¹ (after ischaemic heart disease and stroke) and is the most common cause of hospital death². VTE can be broken down into two specific conditions:

- **Deep vein thrombosis (DVT):** DVT is the formation of a blood clot in a vein (usually in the leg) which totally, or partially, blocks the flow of blood². If all or part of the blood clot breaks off and is carried to another vessel which delivers blood to an organ, the consequences can be devastating. If it occurs in a vessel supplying blood to the lungs, it is known as a pulmonary embolism (PE), which can be rapidly fatal. The symptoms of DVT can include pain, swelling, redness of the affected area, and the dilation of surface veins. The skin may also be warm to the touch
- **Pulmonary embolism (PE):** PE is the formation of a blood clot blocking one or more vessels in the lungs. Once in the lung, the clot may block the circulation, causing sudden death or long-term damage to the lungs and other vital organs. About one third (34%) of VTE deaths are from sudden fatal PE⁴. Symptoms of PE include acute shortness of breath, chest pain and a rapid heart rate; some people may also cough blood. About 1 in 10 deaths that occur in the hospital are caused by PE⁵

Who is at Risk for VTE?

- ◆ Patients undergoing surgery such as major orthopaedic surgery for hip or knee replacement or major surgery for cancer as well as those admitted to hospital for an acute medical condition are exposed to risk factors
- ◆ Patients-related risk factors include inherited thrombophilia, advanced age, obesity, prior VTE and varicose veins³
- ◆ VTE is difficult to diagnose, as up to half of patients have no specific symptoms

What is Arterial Thromboembolism?

- ◆ Arterial thromboembolism is the formation of a blood clot inside an artery. Arterial thromboembolism occurs when oxygenated blood flow from the heart to another part of the body, via an artery, is interrupted by a blood clot. If this occurs in a vessel supplying blood to the brain it can lead to a stroke, which can be severely debilitating or fatal. If it occurs in a coronary artery, it can lead to acute coronary syndrome (ACS), a complication of coronary heart disease which includes conditions such as myocardial infarction (heart attack) and unstable angina. The essential underlying condition for ACS is the build-up of plaque in the inner walls of coronary arteries that narrows the arteries, sometimes decreasing the amount of blood flow to the heart. If plaque from the wall of a coronary artery ruptures, a blood clot can form at the site of the rupture

How is VAT Prevented and Treated?

VAT is responsible for significant morbidity and mortality across a broad range of acute and chronic blood-clotting disorders, and requires active or preventative treatment to avoid potentially serious or fatal patient outcomes.

Anticoagulants have been used for more than 70 years to prevent and treat these potentially deadly blood clots, but widely used traditional therapies are associated with significant drawbacks.

Novel oral anticoagulants hold the promise of overcoming the limitations of traditional anticoagulants to prevent and or treat VAT disease that is responsible for a number of serious and life threatening conditions including deep vein thrombosis (DVT), pulmonary embolism (PE) and stroke.

- ◆ Benefits of novel oral anticoagulants include predictable anticoagulation without the need for routine coagulation monitoring or frequent dose adjustment, low risk of drug-drug interactions and no dietary restrictions
- ◆ Xarelto® (rivaroxaban) is a highly effective, oral anticoagulant developed to prevent and treat dangerous blood clots, protecting patients from blood clots across more VAT conditions than any other novel oral anticoagulant

Who is at Risk for Arterial Thromboembolism?

- ◆ Patients with atrial fibrillation (AF) and those who have survived a previous episode of ACS, including patients in the emergency care setting presenting with chest pain or other symptoms that might indicate ACS stenosis
- ◆ It also affects individuals with atherosclerosis (a narrowing of the arteries). When atherosclerotic plaque ruptures or erodes it could lead to a sudden and critical reduction of blood flow. This tends to happen in areas where blood flow is more turbulent, for example, in places where blood vessels branch off





References

- 1) Naess IA, Christiansen SC, Romundstad P, et al. Incidence and mortality of venous thrombosis: a population-based study. *J Thromb Haemost.* 2007;5(4):692-699
- 2) Geerts WH, Bergqvist D, Pineo GF, et al. Prevention of venous thromboembolism: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest.* 2008;133,(6 Suppl)381S-453S
- 3) Patient UK. Deep vein thrombosis. Available at: <http://www.patient.co.uk/health/Deep-Vein-Thrombosis.htm> Last accessed November 2011
- 4) Cohen AT, Agnelli G, Anderson FA, et al. Venous thromboembolism (VTE) in Europe. The number of VTE events and associated morbidity and mortality. *Thromb.Haemost.* 2007;98,(4)756-764
- 5) Geerts WH, Pineo GF, Heit JA, et al. Prevention of venous thromboembolism: The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. *Chest.* 2004;126, (3 Suppl) 338S-400S

About Xarelto® (Rivaroxaban)

Rivaroxaban is the most broadly indicated novel oral anticoagulant and is marketed under the brand name Xarelto®. To date, Xarelto has been approved for use in the following venous arterial thromboembolic (VAT) indications:

- The prevention of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (AF) with one or more risk factors in more than 70 countries worldwide
- The treatment of deep vein thrombosis (DVT) and prevention of recurrent DVT and pulmonary embolism (PE) in adults in more than 70 countries worldwide
- The prevention of venous thromboembolism (VTE) in adult patients undergoing elective hip or knee replacement surgery in more than 120 countries worldwide

Since the first approval of Xarelto in 2008 in the orthopaedic setting, more than two and a half million patients worldwide have received Xarelto in daily clinical practice in this indication alone.

Rivaroxaban was discovered by Bayer HealthCare, and is being jointly developed with Janssen Research & Development, LLC. Xarelto is marketed outside the U.S. by Bayer HealthCare and in the U.S. by Janssen Pharmaceuticals, Inc. (a Johnson & Johnson Company).

Anticoagulant medicines are potent therapies used to prevent or treat serious illnesses and potentially life threatening conditions. Before initiating therapy with anticoagulant medicines, physicians should carefully assess the benefit and risk for the individual patient.

Responsible use of Xarelto is a high priority for Bayer, and the company has developed a [Prescribers Guide](#) for physicians and a [Xarelto Patient Card](#) for patients to support best practices. To learn more, please visit: <https://prescribe.xarelto.com>.

To learn more about thrombosis, please visit www.thrombosisadviser.com
To learn more about VAT, please visit www.VATspace.com
To learn more about Xarelto, please visit www.xarelto.com

Media Backgrounder
For Ex-US and Ex-UK Use Only



RIVAROXABAN